



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/647,123

08/25/2003

Eran Dvir

25667

9834

20529

7590

04/04/2007

NATH & ASSOCIATES

112 South West Street

Alexandria, VA 22314

EXAMINER

PILKINGTON, JAMES

ART UNIT

PAPER NUMBER

3682

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

04/04/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/647,123

Applicant(s)

DVIR ET AL.

Examiner

James Pilkington

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. The indicated allowability of claims 9 and 20-26 is withdrawn in view of the newly discovered reference(s) to Gawa (USP 5,157,871). Rejections based on the newly cited reference(s) follow.

#### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the inner assembly attached to the support stage assembly, and said outer assembly is driven for movement (clm 13, same as now canceled clm 4) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

Art Unit: 3682

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-17 and 20-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Gawa et al, USP 5,157,871.

Re clms 1, 20, 25 and 26, Gawa discloses a system for controlling an axial movement of an article comprising:

- A support stage assembly (34) driven for movement along x and y axes  
(stage moves to position member 44)
- A spring suspension arrangement mounted on said support assembly (34) comprising
  - First (37) and second (48/30/35/40) vertically oriented assemblies arranged one inside the other, the first assembly (37) being attached to said support stage (34) and the second assembly (48/30/35/40) serving for supporting an article carrying member (44)
  - First and second membrane members (38 and 39) arranged in a spaced apart parallel relationship (see Figure 3)

Re clms 2 and 21, Gawa discloses a drive assembly (made of 29 and magnet member 48).

Re clm 3, Gawa discloses that the outer assembly (37) is attached to the support stage (34) and said inner (48/30/35/40) assembly is driven for movement along said axis.

Re clm 5, Gawa discloses that the outer assembly (37) is composed of at least three space apart pin members (Gawa shows bolts that are used to make up part of the composition of the outer assembly) and the inner assembly (48/30/35/40) is composed of at least one pin member (See Figure 3)

Re clm 6, Gawa discloses that the arrangement of the at least three fixed members (bolts) of the outer assembly defines a regular polygon, and the pin member of the inner assembly is located substantially at the center of the polygon.

Re clm 7, Gawa discloses that the outer and inner assemblies have the same height (Gawa shows in Figure 3 that outer member 37 is the same height as inner member 35 so that the membrane members can be evenly attached between both).

Re clm 8, Gawa discloses that the outer and inner assemblies are configured as cylinders or prisms (see Figures 2 and 3).

Re clm 9, Gawa discloses that the inner assembly (48/30/35/40) at its top and bottom portions is attached to the top and bottom portions of the outer assembly (37) by said first and second membrane members (38 and 39).

Re clm 10, Gawa discloses that the membrane members (38 and 39) have annular geometry (see Figure 4).

Re clm 11, Gawa discloses that the membrane members (38 and 39) are clamped to the opposite sides of each of the outer and inner assemblies via clamping rings (membrane 38 is clamped by ring 36 and outer assembly 37, membrane 39 is clamped by ring 43 and outer assembly 37, membrane 38 is clamped between 30 and 35 of the inner assembly and membrane 39 is clamped between 35 and 40).

Re clm 12, Gawa discloses that the outer assembly (37) is attached to the support stage (34) and said inner (48/30/35/40) assembly is driven for movement along said axis.

Re clms 14 and 23, Gawa discloses that the article-carrying member (44) on the second assembly (48/30/35/40) can rotate, the system being thereby operable as a Z-Theta-system.

Re clms 15-17, 22, Gawa discloses the support stage assembly (34) is driven for movement in a plane perpendicular to said axis (the support stage moves depending on the position 44 needs to be in).

Re clm 24, Gawa discloses a system for controlling an axial movement of an article comprising:

- A support stage assembly (34)
- A spring suspension arrangement mounted on said support assembly (34) comprising
  - First (37) and second (48/30/35/40) vertically oriented assemblies arranged one inside the other, the first assembly (37) being attached to said support stage (34) and the second assembly

Art Unit: 3682

(48/30/35/40) serving for supporting an article carrying member

(44)

- First and second membrane members (38 and 39) arranged in a spaced apart parallel relationship (see Figure 3)
- A drive assembly (made of 29 and magnet member 48).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gawa '871 in view of Horikawa, USP 5,991,005.

Re clm 18, Gawa discloses all of the claimed subject matter as described above.

Gawa does not disclose that the article-carrying member is mounted on a central axis of said second assembly by means of a pair of spherical washers facing each other by their male and female surfaces.

Horikawa teaches an article-carrying member (24) mounted on a central axis of said assembly by means of a pair of spherical washers (near point 24a and mating surface above 24a) facing each other by their male and female surfaces for the purpose of providing a carrying member that can be tilted about its center of gravity thus enabling for another degree of freedom in the carrying members movement (C9-C10).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Gawa and provide for the article-carrying member to be mounted on a central axis of said assembly by means of a pair of spherical washers facing each other by their male and female surfaces, as taught by Horikawa, for the purpose of providing a carrying member that can be tilted about its center of gravity thus enabling for another degree of freedom in the carrying members movement.

Re claim 19, Gawa discloses all of the claimed subject matter as described above.

Gawa does not disclose that the drive assembly comprises a mechanical pair formed by a roller bearing mounted on a tapered surface of a wedge element, and a motor operable for moving the wedge element.

Horikawa teaches a drive assembly comprising a mechanical pair formed by a roller bearing (40) mounted on a tapered surface of the wedge element (37); and a motor (39) operable for moving the wedge element (37) for the purpose of causing a driving force in the z direction of the table from a movement of a linear guide arranged perpendicular to the z direction (C9/L62 – C10/L9).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Gawa and provide a drive assembly comprising a mechanical pair formed by a roller bearing mounted on a tapered surface of the wedge element; and a motor operable for moving the wedge element, as taught by Horikawa, for the purpose of causing a driving force in the z direction of the table from a



Art Unit: 3682

movement of a linear guide arranged perpendicular to the z direction (C9/L62 – C10/L9).

***Response to Arguments***

7. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Pilkington whose telephone number is (571) 272-5052. The examiner can normally be reached on Monday-Friday 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3682

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JP

JP

3/26/07

  
RICHARD RIDLEY  
SUPERVISORY PATENT EXAMINER